WHAT IS CLAIMED IS:

1. A torque transmission coupling comprising:

input-output rotary members rotatably supported to perform input-output transmission of torque;

a frictional engagement section provided between the input-output rotary members to perform torque transmission between the input-output rotary members by enforcing frictional engagement;

a compression member set that comprises a pair of members capable of performing relative rotation and that generates thrust through the relative rotation between the members to thereby cause the frictional engagement section to perform the frictional engagement; and

a rotary actuator that causes both of the members of the compression member set to perform engagement-rotational driving whereby to cause the relative rotation.

2. A torque transmission coupling according to claim 1, wherein:

the compression member set is a compression gear set that comprises a pair of gears provided as the pair of members, a planetary gear engaged with the gears and a planetary carrier for supporting the planetary gear, and that converts an input generated by rotational driving into a compression force in the direction along a rotation axis to thereby cause the frictional engagement section to enforce the frictional engagement, wherein gear ratios or engagement radii between the pair of individual gears and the planetary gear are different from each other; any one of the pair of gears, the planetary gear, and the planetary carrier is non-rotatably supported; any other one thereof is rotationally driven; and the other thereof performs the relative rotation; and

the rotary actuator performs the rotational driving.

3. A torque transmission coupling according to claim 2, wherein:

the rotary actuator performs the rotational driving of the planetary carrier;

the one of the pair of gears is non-rotatably supported;

a cam mechanism is interposed between the pair of gears; and

the gear ratios between the pair of individual gears and the planetary gear are different from each other.

4. A torque transmission coupling according to claim 2, wherein:

the rotary actuator performs the rotational driving of the one of the pair of gears;

the planetary carrier is non-rotatably supported;

a cam mechanism is interposed between the pair of gears; and

the gear ratios or the engagement radii between the pair of individual gears and the planetary gear are different from each other.

5. A torque transmission coupling according to claim 2, wherein:

the rotary actuator performs the rotational driving of the one of the pair of gears;

the other of the pair of gears is non-rotatably supported;

a cam mechanism is interposed between the other of the pair of gears and the planetary carrier; and

the engagement radii between the pair of individual gears and the planetary gear are different from each other.

6. A torque transmission coupling according to claim 2, wherein:

the planetary carrier is supported to be capable of performing constant-angle relative rotation;

an urging member to be interposed between the planetary carrier and a support body side is provided to interfere to rotation with an urging force for the planetary

carrier that rotates in the same direction at a time of the rotational driving by the rotary actuator;

the torque transmission coupling further comprises displacement detection means that detects a displacement amount when the planetary carrier performs rotational displacement in resistance with the urging member; and

an engagement force of the frictional engagement section is obtained in accordance with the displacement amount detected.

7. A torque transmission coupling according to claim 3, wherein:

the planetary carrier is supported to be capable of performing constant-angle relative rotation;

an urging member to be interposed between the planetary carrier and a support body side is provided to interfere to rotation with an urging force for the planetary carrier that rotates in the same direction at a time of the rotational driving by the rotary actuator;

the torque transmission coupling further comprises displacement detection means that detects a displacement amount when the planetary carrier performs rotational displacement in resistance with the urging member; and

an engagement force of the frictional engagement section is obtained in accordance with the displacement amount detected.

8. A torque transmission coupling according to claim 4, wherein:

the planetary carrier is supported to be capable of performing constant-angle relative rotation;

an urging member to be interposed between the planetary carrier and a support body side is provided to interfere to rotation with an urging force for the planetary carrier that rotates in the same direction at a time of the rotational driving by the rotary actuator;

the torque transmission coupling further comprises displacement detection means that detects a displacement amount when the planetary carrier performs rotational displacement in resistance with the urging member; and

an engagement force of the frictional engagement section is obtained in accordance with the displacement amount detected.

9. A torque transmission coupling according to claim 5, wherein:

the planetary carrier is supported to be capable of performing constant-angle relative rotation;

an urging member to be interposed between the planetary carrier and a support body side is provided to interfere to rotation with an urging force for the planetary carrier that rotates in the same direction at a time of the rotational driving by the rotary actuator;

the torque transmission coupling further comprises displacement detection means that detects a displacement amount when the planetary carrier performs rotational displacement in resistance with the urging member; and

an engagement force of the frictional engagement section is obtained in accordance with the displacement amount detected.

10. A torque transmission coupling according to claim 1, wherein:

the one of the pair of members is supported in the support body side in the direction along the rotation axis; and

the thrust is exerted on the other member as a reaction force with respect to the support body side whereby to cause the frictional engagement to be performed.

11. A torque transmission coupling according to claim 10, wherein:

the compression member set comprises a pair of gears, a planetary gear engaged with the gears and a planetary carrier for supporting the planetary gear, converts an

input generated by rotational driving into a compression force in the direction along the rotation axis to thereby cause the frictional engagement section to enforce the frictional engagement, wherein any one of the pair of gears, the planetary gear, and the planetary carrier is non-rotatably supported; and any other one thereof is rotationally driven; and the other thereof performs the relative rotation; and

gear ratios or engagement radii between the pair of individual gears and the planetary gear are different from each other.

12. A torque transmission coupling according to claim 11, wherein:

the rotary actuator performs the rotational driving of the planetary carrier;

the one of the pair of gears is supported in the support body side to be non-rotatable and in the direction along the rotation axis;

a cam mechanism is interposed between the pair of gears; and

the gear ratios between the pair of individual gears and the planetary gear are different from each other.

13. A torque transmission coupling according to claim 11, wherein:

the rotary actuator performs the rotational driving of the one of the pair of gears;

the planetary carrier is non-rotatably supported in the support body side;

a cam mechanism is interposed between the pair of gears; and

the one of the pair of gears is supported in the support body side in the direction along the rotation axis; and

the gear ratios or the engagement radii between the pair of individual gears and the planetary gear are different from each other.

14. A torque transmission coupling according to claim 11, wherein:

the rotary actuator performs the rotational driving of the one of the pair of gears;

the other of the pair of gears is non-rotatably supported in the support body side;

a cam mechanism is interposed between the support body side and the planetary carrier; and

the engagement radii between the pair of individual gears and the planetary gear are different from each other.

15. A torque transmission coupling according to claim 1, wherein the rotary actuator and the frictional engagement section are disposed with rotation axes thereof being aligned with each other.

16. A torque transmission coupling according to claim 2, wherein the rotary actuator and the frictional engagement section are disposed with rotation axes thereof being aligned with each other.

17. A torque transmission coupling according to claim 3, wherein the rotary actuator and the frictional engagement section are disposed with rotation axes thereof being aligned with each other.

18. A torque transmission coupling according to claim 4, wherein the rotary actuator and the frictional engagement section are disposed with rotation axes thereof being aligned with each other.

19. A torque transmission coupling according to claim 5, wherein the rotary actuator and the frictional engagement section are disposed with rotation axes thereof being aligned with each other.

20. A torque transmission coupling according to claim 6, wherein the rotary

actuator and the frictional engagement section are disposed with rotation axes thereof being aligned with each other.

21. A torque transmission coupling according to claim 7, wherein the rotary actuator and the frictional engagement section are disposed with rotation axes thereof being aligned with each other.

22. A torque transmission coupling according to claim 8, wherein the rotary actuator and the frictional engagement section are disposed with rotation axes thereof being aligned with each other.

23. A torque transmission coupling according to claim 9, wherein the rotary actuator and the frictional engagement section are disposed with rotation axes thereof being aligned with each other.

24. A torque transmission coupling according to claim 15, wherein a press member is provided between the frictional engagement section and the compression member set, receives the thrust from the compression member set to cause the frictional engagement.

25. A torque transmission coupling according to claim 1, wherein:

the compression member set is a compression gear set comprising a pair of gears provided as the pair of members;

the rotary actuator comprises a rotational driving shaft tiltedly disposed with respect to the direction along the rotation axis of the compression gear set, and a pair of driving gears fixed to the rotational driving shaft and individually engaged with the pair of gears; and

engagement radii or speed reduction ratios of engagements between the pair of individual gears and the individual driving gears are different from each other.

26. A torque transmission coupling according to claim 25, wherein the compression gear disposed between the gears set comprises a cam mechanism that causes the thrust to be generated by enforcing the relative rotation.

27. A torque transmission coupling according to claim 25, wherein:

one of the gears is supported in a support body side in the direction along the rotation axis;

the other of the gears opposes the side of the friction engagement member; and

the engagement is performed by moving the other gear toward the friction engagement member according to the thrust and supporting the one of the pair of the gears in the support body side.

28. A torque transmission coupling according to claim 26, wherein:

one of the gears is supported in a support body side in the direction along the rotation axis;

the other of the gears opposes the side of the friction engagement member; and

the engagement is performed by moving the other gear toward the friction engagement member according to the thrust and supporting the one of the pair of the gears in the support body side.

29. A torque transmission coupling according to claim 25, wherein:

at least one of the pair of gears and the pair of driving gears is formed of face gears; and

the engagement radii of the pair of gears and the driving gears are different from

each other.

30. A torque transmission coupling according to claim 26, wherein:

at least one of the pair of gears and the pair of driving gears is formed of face gears; and

the engagement radii of the pair of gears and the driving gears are different from each other.

31. A torque transmission coupling according to claim 27, wherein:

at least one of the pair of gears and the pair of driving gears is formed of face gears; and

the engagement radii of the pair of gears and the driving gears are different from each other.

32. A torque transmission coupling according to claim 25, wherein:

the pair of gears and the pair of driving gears are formed of crossed gears or bevel gears; and

speed reduction ratios of the pair of gears and the driving gears are different from each other.

33. A torque transmission coupling according to claim 26, wherein:

the pair of gears and the pair of driving gears are formed of crossed gears or bevel gears; and

speed reduction ratios of the pair of gears and the driving gears are different from each other.

34. A torque transmission coupling according to claim 27, wherein:

the pair of gears and the pair of driving gears are formed of crossed gears or bevel gears; and

speed reduction ratios of the pair of gears and the driving gears are different from each other.

35. A torque transmission coupling according to claim 25, wherein:

one of the input-output rotary members is a clutch housing, and the other thereof is a clutch hub disposed on an inner circumference side of the clutch housing;

the friction engagement member is provided between the clutch housing and the clutch housing;

an compression member opposing the friction engagement member in the direction along the rotation axis is disposed in an end portion between the clutch housing and the clutch hub; and

the compression member is compressed by the thrust of the compression gear set.

36. A torque transmission coupling according to claim 26, wherein:

one of the input-output rotary members is a clutch housing, and the other thereof is a clutch hub disposed on an inner circumference side of the clutch housing;

the friction engagement member is provided between the clutch housing and the clutch housing;

an compression member opposing the friction engagement member in the direction along the rotation axis is disposed in an end portion between the clutch housing and the clutch hub; and

the compression member is compressed by the thrust of the compression gear set.

37. A torque transmission coupling according to claim 27, wherein:

one of the input-output rotary members is a clutch housing, and the other thereof

is a clutch hub disposed on an inner circumference side of the clutch housing;

the friction engagement member is provided between the clutch housing and the clutch housing;

an compression member opposing the friction engagement member in the direction along the rotation axis is disposed in an end portion between the clutch housing and the clutch hub; and

the compression member is compressed by the thrust of the compression gear set.

38. A torque transmission coupling according to claim 29, wherein:

one of the input-output rotary members is a clutch housing, and the other thereof is a clutch hub disposed on an inner circumference side of the clutch housing;

the friction engagement member is provided between the clutch housing and the clutch housing;

an compression member opposing the friction engagement member in the direction along the rotation axis is disposed in an end portion between the clutch housing and the clutch hub; and

the compression member is compressed by the thrust of the compression gear set.

39. A torque transmission coupling according to claim 32, wherein:

one of the input-output rotary members is a clutch housing, and the other thereof is a clutch hub disposed on an inner circumference side of the clutch housing;

the friction engagement member is provided between the clutch housing and the clutch housing;

an compression member opposing the friction engagement member in the direction along the rotation axis is disposed in an end portion between the clutch housing and the clutch hub; and

the compression member is compressed by the thrust of the compression gear set.

40. A torque transmission coupling according to claim 33, wherein:

one of the input-output rotary members is a clutch housing, and the other thereof is a clutch hub disposed on an inner circumference side of the clutch housing;

the friction engagement member is provided between the clutch housing and the clutch housing;

an compression member opposing the friction engagement member in the direction along the rotation axis is disposed in an end portion between the clutch housing and the clutch hub; and

the compression member is compressed by the thrust of the compression gear set.

41. A torque transmission coupling according to claim 34, wherein:

one of the input-output rotary members is a clutch housing, and the other thereof is a clutch hub disposed on an inner circumference side of the clutch housing;

the friction engagement member is provided between the clutch housing and the clutch housing;

an compression member opposing the friction engagement member in the direction along the rotation axis is disposed in an end portion between the clutch housing and the clutch hub; and

the compression member is compressed by the thrust of the compression gear set.

42. A torque transmission coupling according to claim 1, wherein the torque transmission coupling is disposed to any one of an output side of a transfer device, an input side to a rear differential, a propeller shaft between the transfer device and the rear differential, a front-wheel side acceleration shaft, and rear-wheel side acceleration shaft of a four-wheel drive vehicle.

43. A torque transmission coupling according to claim 2, wherein the torque transmission coupling is disposed to any one of an output side of a transfer device, an input side to a rear differential, a propeller shaft between the transfer device and the rear differential, a front-wheel side acceleration shaft, and rear-wheel side acceleration shaft of a four-wheel drive vehicle.